

# JOURNAL

OF THE

## New York Entomological Society.

Vol. XI.

MARCH, 1903.

No. 1.

### NEW NOCTUIDS FOR 1903, No. 2, WITH NOTES ON MAMESTRA AND SCOTOGRAMMA.

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The first paper of this series is in the Canadian Entomologist, Vol. XXXV, January, 1903, p. 9, and six species are there described. The present paper contains descriptions of species and notes on a number of others — chiefly *Mamestra* and *Scotogramma*. It happens not infrequently that, after a genus has been monographed, material accumulates that makes studies possible that were not so when the original work was done; so in the two genera mentioned I have accumulated material that enables me to give figures of genitalic structures of species not in my possession when I first wrote on them; some corrections in the synonymy may also be made on the same occasion for these genera.

#### ***Moma geminata*, sp. nov.**

Ground color of head, thorax and primaries a clear bluish-green, the maculation black and contrasting. Head with a black line across the front. Collar with a black central spot. Patagia and disc with scattered black scales. The scale tuft on the basal segment of abdomen black-tipped; segments blackish, edged with white. Primaries with all the usual markings present, broken, black, contrasting. Basal line geminate, outer portion powdery and marked over the costal area only; inner portion more prominent, curved inward to a basal black dot. A black spot on inner margin near base. An irregular black spur extends from base through the submedian interspace to the angle of t. a. line. T. a. line geminate, broken, inner line best marked by an angulate portion in the middle of the wing; outer line best marked on costa and internal margin, else powdery. T. p. line geminate, broken; the inner portion composed of two main portions, one opposite the cell, the other opposite the inner angle where it is broad, lunate and has an inward tooth; the outer portion is most promi-

ment on the costa and is then broken into somewhat triangular spots. A series of unequal terminal black spots beyond which the fringes are cut with black. Claviform indicated by black scales. Orbicular moderate, upright, oval, concolorous, incompletely outlined. Reniform large, almost lunate, outlined by black scales, the center a black diffuse lunule. A black median shade is marked on the costa, forms a black square between the ordinary spots and is traceable, though powdery, to the inner margin. Secondaries smoky over a white base, with a series of black terminal lunules and a reflection from the outer line and discal spot of the under side. Beneath, white, more or less powdery, with an outer blackish line, a discal spot and a broken black terminal line; primaries with the costal region and disc darker. Expands 1.48 inches = 37 mm.

*Habitat*: Cartwright, Manitoba, May 7.

One female, in good condition from Mr. E. F. Heath. This is a beautiful species, larger than the eastern form and obviously distinct by the geminate median lines and better defined ordinary spots.

**Epidemas obscurus**, sp. nov.

Ground color dull smoky gray, with a brownish tinge in primaries. Head and thorax concolorous, tending to gray tipplings. Primaries with the maculation fairly defined, but in no wise contrasting or prominent. Basal line not obvious. A slender, slightly curved black basal streak, which does not extend more than half way to the t. a. line. T. a. line single, black, slender, outwardly angulate in the interspaces, as a whole a little oblique. T. p. line geminate, the outer part even, smoky and incomplete; inner portion brown, a little lunulate, included space a little paler and with some white scales: as a whole abruptly bent over the cell, then evenly and not greatly incurved below. S. t. line a little paler, broken, indicated by a few whitish scales and by a darker preceding shade on costa and darker terminal space below the apex: a small W-mark is obvious on veins 3 and 4, and in the submedian interspace the line is emphasized by a brown shading on both sides. Fringes long, gray, cut with smoky, with a blackish interline and a blackish line at base. There is an obscure median dusky line, defined only below the median vein. Claviform concolorous, broad, extending half way across median space, incompletely outlined, connected by a blackish double shade with the t. p. line. Orbicular narrow, oblong, oblique, of the palest ground color, outlined in black or smoky. Reniform large, kidney-shaped, gray, inner portion outlined by black or gray scales, outer obscure, diffuse. Secondaries soiled whitish, with a smoky line at base of fringes, an extramedian smoky line and a dark discal lunule: the tendency is to a darkening between the extramedian line and the outer margin. Beneath powdery, with a blackish extra-median line and discal spot on all wings: primaries smoky gray; secondaries whitish. Expands 1.08-1.36 inches = 27-34 mm.

*Habitat*: Pullman, Washington, October 14 and 26.

Three males and one female received from Prof. C. V. Piper, none of them in good condition and the smallest example—the female—probably undersized. The species is congeneric with *cinerea* which I have from the same locality, but it lacks all contrasts and is altogether

more obscure and sordid as well as smaller in size. There is also a difference in the details of maculation which can be better brought out by comparing the descriptions. The tendency in this species is to an obsolescence of the maculation and in one example it is traceable with difficulty only.

### **Rhynchagrotis niger**, sp. nov.

Ground color dull blackish with a purplish tinge, all the maculation obscure except for the velvety black filling in cell before and between the ordinary spots. Head and thorax concolorous, collar with a more or less obvious transverse line or shade of yellowish scales, centrally. Thoracic anterior and posterior divided tufting prominent, the scales a little gray-tipped. Primaries almost even in color, the costal region scarcely paler. Basal line geminate, velvety black. T. a. line geminate, included space a little paler, inner line obscure; outer line black, narrow, outcurved in the interspaces, as a whole a little outwardly oblique. T. p. line geminate, both lines even, obscure, feebly sinuate, the included space a little paler. S. t. line vaguely indicated at costa, else practically not traceable. No terminal spots. Claviform vaguely indicated on one example. Orbicular V-shaped, concolorous, open to the costa, elsewhere bordered by black. Reniform moderate, kidney-shaped, concolorous, incompletely defined by pale scales except anteriorly where it touches the black filling of the cell. Secondaries smoky fuscous, hardly paler at base, fringes yellowish with a smoky interline; a vague discal lunule. Beneath blackish or smoky, paler and more powdery along the costa, both wings with a blackish outer line, secondaries with a discal lunule. Expands 1.28-1.40 inches = 32-35 mm.

*Habitat*: Pullman, Washington, May 27; Moscow, Idaho, May 14, Prof. C. V. Piper.

Three female specimens in fair condition. The species resembles a small black *formalis*, or an *emarginata*, in which the pale outlines to the ordinary spots had disappeared and the black filling of the cell had been added. The course of the lines is different, however; there is no basal black mark or streak and the costal region is not in the least discolored. The specimens came with a series of *formalis* and *emarginata* and were at once easily recognizable as different.

### **Rhynchagrotis meta**, sp. nov.

Ground color of head and thorax a somewhat rusty red, collar with or without transverse black scale lines. Primaries leaden gray with a vinous red suffusion, which predominates through the center of the median space, over the course of the s. t. line and on the fringes. Basal space to t. a. line mostly gray except along internal margin. Basal line geminate, black or brown, inner line complete, outer broken. T. a. line geminate, inner line not contrasting, outer line black or brown, as a whole outwardly complete, quite even and only a little outcurved in the interspaces. T. p. line geminate, rather evenly outcurved over the cell, very feebly incurved below; outer line obscure, inner line even or nearly so, brown or smoky. S. t. line a series of yellowish scale dots over which is a somewhat diffuse red shade

band. There is a series of vinous red terminal lunules at the base of the fringes which are of the same color. No claviform is obvious in any specimen before me. Orbicular V-shaped, open to the costa, concolorous with the gray shading of the wing and defined only by the slight contrast between this and the vinous red shading below it. Reniform moderate in size, kidney-shaped, gray, defined in part only by the reddish shade which borders it more or less. Secondaries smoky, with a yellowish tinge toward base, fringes whitish, with a smoky interline. Beneath reddish-gray, powdery; primaries with disc smoky and with a more or less complete outer line; secondaries with a wavy extramedian line and a small discal spot. Expands 1.20-1.36 inches = 30-34 mm.

*Habitat*: San Francisco County, California; Pullman, Washington, June 10, Experiment Station No. 295.

Three females in good condition. The California example has been in my collection for a long time and was looked upon as a suffused form until the specimens received from Prof. C. V. Piper made it certain that there is a good species. It has the wing form of *placida* and a casual resemblance to that variable species; but the open orbicular separates the new form at once and, among its associates in this character, I know of none with which it can be readily confused.

As between the specimens, that from California is the largest and has the least contrasts; not a black scale is on the primaries and the gray has a reddish tinge throughout.

#### **Abagrotis ornatus, sp. nov.**

Ground color creamy gray, varying to darker more smoky gray, the markings clearly written, ordinary spots contrasting, discolored. Head and thorax concolorous; palpi deep chestnut brown on the sides. Primaries with all the markings present. Basal line geminate, blackish, powdery, its parts widely separated. T. a. line geminate, the inner portion vague and broken, the outer distinct, black, not sharply defined; as a whole outwardly oblique, a little outcurved in the interspaces, a longer inward tooth on the submedian vein. T. p. line geminate on the costa, the outer line narrow, powdery, even over the subcostal, thence reduced to dark venular points. Luner line blackish, powdery, narrow, crenulate: as a whole little outcurved over the cell and then a very little incurved to the inner margin. S. t. line pale, slightly sinuate, preceded and emphasized by a narrow, blackish shade, the terminal space a little paler. A broken black terminal line, which may be reduced to a series of venular dots. Fringes with a slightly paler line at base and narrowly cut with the same shade. Claviform wanting. Orbicular oval, oblique, narrowly black ringed, defining a pale annulus, within which the spot is solidly and evenly filled with rusty brown. Reniform upright, rather narrow, only a little kidney-shaped, incompletely outlined by black scales which border a pale annulus: within this the center is brown-filled and a black powdering around the margins emphasize the distinctness of the spot. Secondaries smoky, paler basally, fringes pale with a reddish tinge; a blackish discal lunule apparent. Beneath reddish, powdery, with an incomplete exterior line;



primaries with a darker disc and a diffuse discal blotch; secondaries with a small, rather well-defined discal lunule. Expands 1.32-1.44 inches = 33-36 mm.

*Habitat*: Kaslo, British Columbia, J. W. Cockle; Idaho, C. V. Piper.

Three female specimens, one of them in excellent condition, the others somewhat rubbed and broken. The Idaho specimen is darker throughout, but does not differ otherwise from the Kaslo examples.

In the absence of the male the reference to *Abagrotis* is somewhat uncertain. I am assuming that the ♂ will be found to have serrated and bristle-tufted antennæ because the species resembles *erratica* in general appearance and type of maculation more than it does any species of *Rhynchagrotis*. To the latter genus the species must be referred should the ♂ antennæ prove to be simple.

#### ***Eueretagrotis inattenta*, sp. nov.**

Ground color an even, smoky, purplish-brown. Head and lower half of collar deep mahogany brown, velvety. Thorax else concolorous. Primaries very smooth and even, the maculation poorly defined, no contrasts except the quadrate velvety black patch between the ordinary spots and the small, triangular spot before the orbicular. Basal line geminate, marked across the costal region only. A diffuse blackish streak from base, below the median vein, almost to the t. a. line. T. a. line geminate, obscurely marked, outcurved in the interspaces and a little outcurved as a whole. T. p. line geminate, included space a little lighter than the ground, inner line feebly lunulated, outer line even, best marked by the slightly deeper s. t. space; as a whole nearly parallel with the outer margin. S. t. line pale, more or less broken, a little irregular, on the whole very nearly parallel with the t. p. line. Claviform small, concolorous, incompletely outlined. Orbicular large, concolorous or a little paler, slightly ovate, open above and elsewhere defined only by the black shading. Reniform large, kidney-shaped, concolorous or a little paler, usually outlined by somewhat darker scales, sometimes also by a few of yellowish tinge. A series of very small, blackish terminal lunules. Secondaries smoky gray, almost even, with a faint yellowish tinge basally and on fringes, and a darker terminal line. Beneath, primaries smoky, more or less powdery, with an incomplete outer line and a vague discal spot. Secondaries paler, more grayish, powdery on the costal region, with an outer smoky line and a smoky discal lunule. Expands 1.32-1.52 inches = 33-38 mm.

*Habitat*: Calgary, Alberta, Head of Pine Creek, July 10-14, F. H. Wolley Dod; Pullman, Washington, June 9, Exper. Station No. 320, C. V. Piper.

Four males in good condition are now at hand. ! Heretofore I have considered this as a form of the eastern *perattenta* and have so named specimens for Mr. Dod. *Perattenta* occurs at Cartwright, Manitoba, and as it is there somewhat less mottled than the normal Atlantic coast type I considered the Calgary specimens as larger, more

even examples. The receipt of an example from Professor Piper which was yet larger, darker and more even in color, induced me to reëxamine the series and to dissect out the genitalia. The new species is uniformly larger, darker and even in color, without mottling and with the terminal space not lighter than the ground, though in one case somewhat lighter than the s. t. spaces.

**Carneades masculinus**, sp. nov.

Ground color a dull leather brown, lighter or darker, with smoky or blackish shadings. Head ranges from brown to purplish-gray, with a darker line across the front. Collar light brown or gray inferiorly, to a transverse black line which is more or less obviously bordered on both sides by white scales: upper part of collar concolorous with thorax, sometimes tipped with brown. Thoracic disc ranges from brown to purplish-black, the edges of the patagiæ sometimes relieved by white scales. Primaries with costal region, to the t. p. line yellowish, grayish or whitish, always contrasting with the rest of the wing; median vein white to the end of the cell. Basal line barely indicated by geminate dots on costa. T. a. line indicated in the same way, and, in some examples, by a slightly paler line in the submedian interspace. T. p. line defined only by the difference in shade between the darker median space, and the lighter s. t. space; as a whole evenly outcurved over the cell and almost evenly oblique below. S. t. line very irregular, defined only by the contrasting darker terminal space and by a series of 3 or 4 preceding, more or less sagittate marks: the terminal space completely cut by pale rays on veins 3 and 4. A blackish terminal line and a pale line at the base of the fringes, which are of the darkest wing color. A black shade line from base through submedian interspace carries the narrow, black-filled claviform. Orbicular round, small or moderate in size, black-ringed, annulate within this ring by whitish scales, the center brown; occasionally the upper margin of the spot is cut by the pale costal area. Reniform moderate, kidney-shaped, margined by black scales within which is a whitish annulus: center brown. The cell before and between the spots is black or blackish. The internal margin is of the brown or lighter ground and, above this, the median space is dark to the median vein, cut only by the paler shade accompanying vein 2; but the amount of contrast between the shades varies. Secondaries of the male white or whitish; the veins, a discal lunule, a terminal line and the apical area a little smoky. Beneath, primaries gray, powdery, with a poorly marked incomplete extra-median line and discal spot: secondaries whitish, powdery along the costa, with a dark terminal line and discal spot. Expands 1.20-1.44 inches = 30-36 mm.

*Habitat*: Silverbow Co., Montana, 5,800 feet, August 28, R. A. Cooley; Yakima, Washington, C. V. Piper; southern Utah, April 1-15, Poling.

Seven examples, all males, and four of them decidedly ragged. The species is stout, comparatively short-winged, with proportionately very heavy thorax, and belongs in a general way with *furtivus*

or *idahoensis*; differing from these in the pale rays crossing the s. t. line, and from the other species in the strong costal contrast accompanied by the obscuring of the transverse maculation. There is quite a variation in color, but the specific habitus is so well marked that this is not confusing.

**Carneades focinus**, sp. nov.

Ground color ashen gray, varying somewhat in tint, but never very dark. Head concolorous or paler, sometimes rusty brown, with or without a black line below the antenna. Collar with a blackish transverse line across the middle, above which follow a pale gray and a paler band at tip; and below which the color is usually more or less rusty, often forming a pale spot at the base of the primaries. Thoracic tuftings often gray-tipped, and sometimes the center of disc may be gray. Primaries with all the maculation present, well defined, the ordinary spots large and a little contrasting. At base and through lower half of wing generally, the gray shade predominates: through the cell and in the upper half of wing a brown shade obtains which may change to blackish between the ordinary spots. The terminal space is the darkest portion of the wing. Basal line geminate, black, a little bent on the subcostal, sometimes a little shaded outwardly so as to give the appearance of a basal dash. T. a. line geminate, blackish, a little outcurved in the interspaces, as a whole somewhat oblique outwardly. T. p. line geminate, smoky, the outer portion equal, the inner lunulate or even crenulate, as a whole well removed from the base, broadly outcurved and rather even below that. S. t. line pale, irregular, preceded by sagittate black spots and else marked by the dark terminal space. A median shade runs obliquely between the ordinary spots, darkening the reniform and then running close to t. p. line. There is a series of black terminal lunules, and the fringes are interlined with smoky. The claviform is small, concolorous, smoky ringed. Orbicular large, oval, oblique, margined in blackish, gray-filled, sometimes not closed superiorly. Reniform large, kidney shaped, gray, the lateral margins marked with yellowish scales, the upper and lower margins sometimes obscured. Secondaries pale yellowish, becoming smoky outwardly to the whitish fringes: darker in the female. Beneath whitish, powdery, disk of primaries tending to smoky and in the female, more or less completely smoky. On both wings an outer dark line, and on secondaries a small, dark, discal spot. Expands 1.24-1.48 inches = 31-37 mm.

*Habitat*: Calgary, Canada; Pullman, Washington; Glenwood Springs, Colorado; Truckee and Sierra Nevada, California: June, July and August.

This is a common species represented in my collection by good series of both sexes. It is the species that I have mistaken for *friabilis* in collections and have so named for correspondents. A re-examination of the type of *friabilis* in the British Museum made it clear that this form would have to receive a new name. It is an ally of *tessellata* but grayer and narrower winged, with larger ordinary spots.

**Hadena (Xylophasia) albiserrata**, sp. nov.

Head, thorax and primaries blackish over smoky, with sparse gray powderings, giving the insect a rough appearance. Head with a black line across the front; collar with a black line across the middle. Thoracic tuftings distinct, tipped with gray. Abdominal tuftings prominent. Primaries with all the maculation obscured, no contrasts save in the large, white powdered reniform and in the sharply defined white dentate s. t. line, in which an obvious W is marked on veins 3 and 4. Basal line marked by black scales and a gray included space. T. a. line practically lost in one example; traceable in the other; upright or nearly so, a little irregular, black, preceded by white scales. T. p. line strongly outcurved over the cell, obliquely incurved below grayish with a scarcely defined preceding line to the middle of the wing below the reniform, then better marked, with a vague grayish cloud in the submedian interspace. S. t. line as described, margined by black interspaceal dashes. A series of black terminal lunules. A very narrow whitish line at the base of the fringes, which are narrowly cut with white on the veins. Claviform indicated by black scales and a gray shade, followed by a blackish shade to the t. p. line, connecting the median lines in the submedian interspace. Orbicular oval, oblique, gray, with smoky center, not sharply outlined. Reniform large, kidney-shaped, gray-powdered, with a smoky filling in which is a white lunule. Secondaries whitish, powdery in the male; smoky, powdery in the female; with a black terminal line, a darker outer shade and a discal lunule in each case. Beneath, ashen gray, powdery, with an extra-median and sub-terminal whitish shading and a dark discal spot. Expands 1.64-1.76 inches = 41-44 mm.

*Habitat*: Pullman, Washington, Sept. 19; Exper. Sta. No. 639; C. V. Piper.

One, somewhat ragged male, and one good female, from Professor Piper. The male is the smaller, a little the better marked and has whitish secondaries. The female is very obscure and looks powdery, blackish, the white s. t. line only standing out in bold relief. The relation is to *H. versuta* and the series in which there is a small W in the s. t. line.

**Hadena (Xylophasia) alberta**, sp. nov.

Ground color dark, smoky red brown, varying in tint and appearing like a smoky suffusion over a red-brown base. All the maculation is obscure, not contrasting, a variable bluish-gray powdering on the veins and along the course of the median lines. Basal line traceable, geminate, broken, extending to a short, slender, black basal streak. T. a. line geminate, broken, irregular, as a whole outcurved, rarely traceable for its entire course. T. p. line geminate, outer line obscure and even, inner line narrow, black, lunulate, broadly outcurved over the cell and rather evenly oblique to inner margin. In one example the included space is continuously bluish, in one there is no blue at all and the other three are intermediates. S. t. line broken, consisting of vague paler spots accompanied by darker shadings and forming in most examples a traceable W; it may be almost entirely wanting. A series of small black terminal lunules at the base of the slightly scalloped fringes. Claviform traceable,

concolorous, outlined in black, extending half way or more across the median space ; very obscure in dark examples. Orbicular small, oblong, oblique, slightly paler than ground, completely outlined in dark smoky. Reniform moderate, upright, kidney-shaped, obscurely defined, a little paler outwardly at and above the middle, somewhat darker inferiorly. Secondaries smoky fuscous, fringe and base a little paler ; a dusky discal lunule traceable. Beneath smoky, powdery and with a reddish tinge along the costa ; both wings with a smoky extra-median line and secondaries with a blackish discal spot. Expands 1.44-1.64 inches = 36-41 mm.

*Habitat* : Calgary, Alberta, June 24 to July 7.

Three male and two female examples, of which two male and one female were received from Mr. F. H. Wolley Dod under the number 33 (head of Fish Creek) and one male and one female are from Dr. Wm. Barnes.

The species is allied to *cinifecta*, but is very dark and the maculation is not easily made out in some specimens. The abdominal tuftings are obvious, though not prominent, the male antennæ are thickened and obviously ciliated.

#### ***Hadena*(*Xylophasia*) *parcata*, sp. nov.**

Ground color dull luteous with a smoky suffusion, the maculation obscure. Median lines marked by smoky, geminate dots on costa, then continued as bluish, powdery lines, hardly defined by localized darker scales. Basal line traceable. A very fine blackish basal streak. T. a. line as a whole outwardly oblique to the submedian vein, then rather abruptly bent inward. T. p. line evenly outcurved over reniform and evenly oblique below it. S. t. line marked by a more leaden gray tint in the terminal space, broken to relieve a W-mark which, though vague, is yet the most obvious feature of the line. Fringes a little scalloped, cut with pale on the veins. A rather broad, diffuse median shade is traceable between the ordinary spots, darkening the lower half of the reniform and inwardly bent below it. Orbicular barely traceable, oblong, oblique. Reniform moderate, kidney-shaped, undefined, a little paler outwardly. Claviform vaguely indicated. Secondaries pale smoky, lighter at base, fringes whitish, a vague, dusky discal spot. Beneath powdery gray, disc of primaries a little darker, a common extra-median line and discal spot : the spot and line much more obscure on the primaries. Expands 1.44-1.52 inches = 36-38 mm.

*Habitat* : Yellowstone Park, Wyoming.

One male and one female from Dr. William Barnes. Despite the apparent differences it is not impossible that this may be a race of *alberta*. I placed it as such, at first ; but the differences were so well defined and the total impression was so distinctive that I concluded to separate the two. The scheme of maculation is similar ; but this species is much lighter in color, with narrower primaries, better defined and more characteristic W-mark, and an obvious median shade.



**Oncocnemis aurea** Grt.

This was described as a *Pseudanarta* by Mr. Grote and was unknown to me when I wrote my revision of *Pseudanarta* in 1889. I saw the type in the British Museum in 1891, and in my Catalogue (1893) I note that the species has armed anterior tibiæ; but I considered it rather Heliothid than otherwise from the examination then made. A more careful study of the type was made in 1900 and, on my return, I identified the species in my box of *Oncocnemis* — where it belongs. Six examples are before me at present, five of them from various Texan localities, one from Hot Springs, New Mexico, 7,000 feet alt., and there is on the whole a close resemblance between them. One specimen from Shovel Mountain, Texas, is larger than the others and the outer half of the wing is gray, quite sharply defined from the basal dark portion; but a tendency to this is noticed in a form from San Antonio, and is probably within the range of variation.

**Oncocnemis nigerrima**, sp. nov.

Head, thorax and primaries black or smoky over a gray base. On the head and thorax gray scales intermingle with the black, and the collar is narrowly gray-tipped over a blackish line. There is a black line between the antennæ and a paler line across the middle of the collar. Basal line of primaries indicated by black scales on the subcostal vein. T. a. line single, black, outcurved, a little irregular, preceded by a shading of gray scales. T. p. line single, evenly curved over the cell and as deeply incurved below it; a shading of gray scales on both sides giving a slight relief. S. t. line gray, broad, linear in the costal region, else diffuse, irregular, preceded by black lines in the interspaces. A black terminal line. Fringes long, grayish at base, interlined with smoky and cut with smoky beyond the interline. Claviform concolorous, outlined by separate black scales; short and broad. Orbicular small, round, gray with a smoky center, outlined by black scales. Reniform large, broadly oval, oblique, defined by a white ring, the center smoky brown. Secondaries deep orange, with a broad black border which extends also along the costa. Beneath, primaries black, with the reniform white. Secondaries as above. Expands .75 inch = 19 mm.

*Habitat*: Yuma County, Arizona, in July.

One good male from Mr. Geo. S. Hutson, taken in the desert area. The resemblance is to *aurea* Grt., than which the new form is smaller, blacker, with better defined markings, orbicular, clearly defined and the secondaries more deeply colored. The well-defined s. t. line which is lacking in *aurea* and the well-defined white-ringed reniform are the most striking characters of this species. *Corrusca*, which belongs to this same little group, is larger than either *aurea* or *nigerrima* and does not have the costal area of secondaries black.

**Oncocnemis euta**, sp. nov.

Ground color of head, thorax and primaries a pale chocolate brown. Head and thorax concolorous, the vestiture scaly and in the specimens disarranged. Primaries with all the maculation obscure, an oblique indefinite paler shading through the outer third of the wing relieving it from absolute uniformity. The basal and median lines and the median shade are marked on the costa by spots or darker shades and occasional black scales on the veins; but no course can be made out. S. t. line vaguely traceable as a zigzag pale line, emphasized here and there by obscure blackish marks. A narrow blackish line at the base of the long fringes, which are cut on the outer edge with darker brown. There is a very narrow, broken line from base, at the end of which a claviform is indicated by black scales. Orbicular small, round, concolorous, outlined by black scales which incompletely define a slightly paler ring. Reniform small, lunate, outlined and annulate in the same way. Secondaries yellow, with a broad black margin taking up the outer third of the wing. Fringes yellowish or brown. Beneath, both wings yellow with a broad marginal band, brown on the primaries, black on the secondaries. Expands .88-1.00 inch 22-25 mm.

*Habitat*: Utah.

Two female specimens in good condition save that the thoracic vestiture is disarranged and partly lost. The resemblance is to *mirificalis*, but this is a smaller species, with lighter primaries on which the maculation is barely traceable. Unfortunately I have no better data as to locality than above given, and none as to date or the collector of the specimens.

**Oncocnemis chorda** Grt.

This was described as an *Homohadena* and, when I revised that genus in 1890, I had, apparently, a specimen from the Edwards collection before me. Whether that specimen was imperfect or whether I simply accepted the generic reference as correct, I cannot say now; but in 1900 the type in the British Museum seemed familiar, and on examination I recognized it as my *Oncocnemis resecta*. The type shows the generic characters clearly and my examples came from the type locality; resembling the original specimen much more nearly than does the Edwards specimen, which is from Sierra Nevada.

**Oncocnemis rosea**, sp. nov..

Ground color yellowish-gray. Head and thorax with a rosy red suffusion which fades out in old specimens and leaves the pale luteous ground with an odd discoloration that is recognizable when a fresh specimen comes to hand. Head with a dusky line across the front. Primaries with a rosy tinge in the basal space which changes beyond the t. a. line to a gray which, in the s. t. space becomes blackish or smoky and darkens the outer portion of the wing. Basal line single, blackish-brown, narrow, well-marked. T. a. line single, broad, a little diffuse, velvety blackish-brown, a little outcurved. T. p. line lunulate, single, blackish on costa, else smoky, slender,

followed by a narrow pale shading, rather abruptly bent over the cell, then evenly oblique to the inner margin. S. t. line pale, irregular, broken, almost punctiform. Median shade marked by a black spot on the costa, thence oblique between the ordinary spots almost to the t. p. line; then parallel with this line and close to it to the inner margin; nowhere well-marked except on the costa. The outer margin is slightly scalloped and emphasized by a narrow, dark, terminal line, followed by a narrow pale line at the base of the fringes. The latter have a dusky interline and are incompletely cut opposite the interspaces. Claviform wanting. Orbicular round, rather large in size, paler than the ground, not defined. Reniform moderate in size, broad, upright, paler than the ground, not outlined and incompletely defined. Secondaries whitish, somewhat translucent, with a broad smoky outer border. A pale yellow, followed by a smoky line at the base of the fringes. Beneath whitish, smoky toward the outer margin, the maculation of the upper side faintly reproduced. Breast and base of legs with a pinkish tinge, the tarsi pale ringed. Expands 1.20 inches = 30 mm.

*Habitat*: Colorado desert, Hy. Edwards; southern Arizona, April 1-15, Poling.

Two males: one is an old specimen given me many years ago by the late Henry Edwards. I recognized it as distinct from the described species, but realized also that it must be a discolored example; so I held it until I received recently from Dr. Barnes a fresh male which belongs obviously to the same species. The rosy flush over the thorax and basal space, and the broad, velvety, somewhat diffuse t. a. line serve to differentiate the species at once. It is allied to *refecta* in the simplicity of the basal line.

### ***Oncocnemis simplicia*, sp. nov.**

Primaries dull luteous gray, powdery and obscurely strigate so as to give a sordid confused appearance. Head deep chestnut brown. Basal line single, black, oblique, connected with the t. a. line by a narrow blackish streak. T. a. line single, black, broad, oblique. T. p. line marked by a smoky costal spot over the reniform, then almost lost as it bends over the cell; reappearing below vein two as a single black line, a little incurved and forming a slight outward dent on vein 1. S. t. line a vague, irregular palershading, and there is a series of black venular dots on the slightly scalloped outer margin. Orbicular concolorous, oval, decumbent, narrowly pale ringed. Reniform narrow, almost lunate, pale ringed, the annulus edged with somewhat darker scales; center a little darker than ground. Secondaries translucent, white with a slight yellowish tinge, tending to smoky at the margin. Beneath yellowish-white, powdery along the costa and apically, both wings with a broken outer line; primaries with a small discal spot. Expands 1.28 inches = 32 mm.

*Habitat*: Colorado desert.

One male in fair condition. This is another of those specimens that has rested, undescribed, in my collection for many years, awaiting a companion of the other sex. I suspected a possible connection

between this form and the one just described as *rosea*; but the occurrence of another example of the latter makes it safe to separate this as a good species. The very simple maculation should make it a recognizable form; but there is a possibility that the ground is somewhat discolored and more yellowish than a fresh specimen would be.

#### GENERAL NOTES ON MAMESTRA.

In my revision of the species of *Mamestra*, Proc. U. S. Nat. Mus., XIV, 197-276, I listed 89 species, of which 76 were autotypically known to me. Of those that were then unknown I have since recognized *sutrina*, *vittula* and *dimmockii*. *Condita* has been referred to the Agrotid series. *Strigicollis* has been referred as a synonym to *laudabilis*. *Expulsa* Wlk. is a synonym of *Carneades insulsa*; *septentrionalis* Wlk. is *Carneades messoria*; *punctigera* Wlk. is an earlier name for *Carneades pastoralis* Grt.; *vetusta* Wlk. is also a *Carneades*; *obliviosa* Wlk. is *Xylophasia lateritia* or something closely allied; and *associans* Wlk. is the *Noctua lubricans* of Guenée. *Ferrealis* Grt. and *impolita* Morr. yet remain unknown to me. I have again compared all my material carefully and find nothing to fit to either description.

On a renewed examination of the species in the British Museum, made in 1900, I again looked over the type of *Mamestra cristifera* Wlk., and concluded that Mr. Grote was right in declining to accept the reference of his *lubens* as a synonym to Walker's species. The lack of the brighter colorings which I had believed to be due to fading or to local variation now seems normal, with larger material, and the species is really nearer to my *invalida* than to *lubens*. I do not care to make this reference positively, however, because I have no material from the Hudson Bay faunal region and, with my present information concerning this fauna, I do not consider a good species at all improbable. At all events *lubens* Grt. is not *cristifera* Wlk.

In the *Biologia Centrali Americana Mamestra configurata* Wlk. is figured on Pl. XXVI of the Heterocera, Fig. 20. I noted that this was a very close ally of *Barathra occidentata* Grt., but delayed making the reference until I could examine the type. This was done later and I have no doubt that the two names refer to the same species. Walker's species was described from Doubleday's Mexican material in 1856, Cat. Brit. Mus. Het., IX, 234, and the generic characters are obvious. Mr. Grote's material came from New Mexico, not so far removed in faunal character.

Of the other species referred by me as varieties, *juncimacula* is a good species and so is *comis*, which I referred to as a synonym of *olivacea*. This latter correction I made in the Trans. Am. Ent. Soc., XXVII, 230, and would not think it necessary to repeat it here except for the fact that in Dr. Dyar's catalogue the species is again referred as a form of *olivacea*; and practically every form separated in my recent review of the species allied to *olivacea* appears as a synonym without explanation or comment. It goes without saying that I do not accept this reference, and prefer to regard the species as listed in the paper above referred to.

Aside from the forms allied to *olivacea* I have described since the revision 27 species, Mr. Strecker has described four, and one additional species is presented here. This gives altogether a series of 116 species, and the end is not yet.

*Mamestra purpurissata*, *M. juncimacula* and *M. nugatis* form a little group of allied yet perfectly distinct species, the male genitalia of which are shown at Pl. I, Figs. 1, 2 and 3. The figure representing *purpurissata* is redrawn from an eastern specimen, because Fig. 6 in my revision of *Mamestra*, Proc. U. S. Nat. Mus., XIV, Pl. VIII, really represents *juncimacula* and not *purpurissata* as stated. The fact is that both species may have the ordinary spots either fused or separated, though the fusing is rare in *purpurissata*, while it is not uncommon in *juncimacula*. Of the five examples of the latter species now before me two have fused spots, while of the eight examples of the former only one shows any appearance of a union. Comparing the two series, *purpurissata* has dark secondaries in both sexes, the primaries broad, with the median lines fairly obvious. In *juncimacula* the secondaries are whitish in both sexes, with smoky outer bordering: the primaries are narrower, have a more pointed apex, the outer margin is much more oblique, the hind angle distinctly retracted and the median lines are practically lost. It is altogether a brighter species and the s. t. line has the W-mark sharply cut to the outer margin.

*Nugatis* is smaller than either of the others and has entirely white secondaries. The primaries are more like *juncimacula*, but strigate in appearance with the transverse maculation practically all lost. The tendency here is also to a union of the ordinary spots; but whereas, in the larger forms the line of connection extends inferiorly on the median vein, in *nugatis* it is central and through the cell itself.

Another series of allies is *Mamestra discalis*, *nimbosa*, *imbrifera*,



*rogenhoferi* and *mystica*; the latter being the only one not figured in my revision of 1891. The genitalia are shown here at Pl. I, Fig. 4, and while they show a distinct agreement in type, also prove themselves different from any other species. Though the superficial resemblance to *nimbosa* is close, the genitalic resemblance is nearer to *imbrifera*, while from both the new form differs in lacking the small accessory clasper with spoon-shaped tip.

*Mamestra gussata*, *M. segregata* and *M. plicata* prove to be more nearly related than I had supposed, judging from superficial characters only. A comparison of Figs. 6, 7 and 8 will show that all three have genitalia of the same general type; the differences, such as appear, being in part due to the difference in the arrangement of the double claspers on the slide. But, curiously enough, while *gussata* and *segregata* are most nearly alike superficially, the genitalia are most dissimilar, while *plicata*, which looks obviously different from either, has a close genitalic resemblance to *segregata*. All the species have the antennæ serrated and bristle-tufted in the male, and agree in general type of maculation. *Plicata* is the largest species, very even in color, the markings neatly defined, no obvious median shade and no black about or between the ordinary spots. *Gussata* is smaller, broader-winged, with a grayish powdering over the brown base. There is a more or less obvious dusky median shade, the maculation is more broken and irregularly defined, a darker, brown shade tends to connect the claviform to the t. p. line and the cell becomes darker about the obscurely defined ordinary spots. In *segregata* we have a more boldly defined form, the median lines well marked, connected by a black bar over the claviform, a variably defined though not prominent W in the s. t. line, and the cell before and between the ordinary spots black. All things considered, the species are fairly well separated though closely allied and obviously descendants from the same stock.

Another member of this series is *negussa* in which the maculation consists of narrow gray lines in a grayish-brown base. The genitalia are practically like those of *gussata*, and with a sufficient series at hand, it is probable that the two will be found to be forms of one species. For the present this may be held as a hoary-gray type without obvious contrasts.

In its superficial characters and in the general type of maculation, *Mamestra navia* resembles *gussata* and belongs to the same general

series; but the genitalic structures of the male are totally different. They are shown on Pl. I, Fig. 12, and a comparison with Fig. 6 will at once show the differences between the two.

*Mamestra mutilata* was referred by me on superficial characters to *cuneata* and *strutina*: unfortunately, while the example was a good one I failed to get out the genitalia in good shape. What I obtained is shown at Pl. I, Fig. 11, and while it is not much, it is sufficient to show that it is not of the *cuneata* type at all. The latter is shown at Pl. X, Fig. 59, of Proc. U. S. Nat. Mus., XIV. *Strutina*, which is so nearly like *cuneata* that it might be readily confused with it, has male characters entirely different. Those of *cuneata* have been already referred to; those of *strutina* are figured in Pl. I, Fig. 9.

The male genitalia of *Mamestra intentata* are shown at Pl. I, Fig. 10, and they are almost identically like those pictured for *M. incurva* in Proc. U. S. Nat. Mus., XIV, Pl. XI, Fig. 54. Yet, superficially there is little resemblance between the two. *Incurva* is a clean-cut ashen gray species with smooth vestiture and well-defined maculation, the primaries rather narrow and short. *Intentata*, on the contrary, is a powdery fuscous gray, the maculation all diffuse, hoary, the vestiture rough. It is also decidedly larger and the primaries are broader, more trigonate, the apices much better marked. A closer relative superficially is found in *M. leucogramma*, which has similar harpes, but altogether different claspers (Proc. U. S. Nat. Mus., XIV, Pl. VIII, Fig. 7).

*Mamestra ingravis* has no close allies in superficial appearance, and this is indicated also in the genital characters. Pl. I, Fig. 5, illustrates a very distinctive structure which has no close parallel to any other species figured by me.

*Mamestra cervina* resembles a small *lustralis* and the genitalia bear out the relationship so indicated. *Cervina* is here figured on Pl. I, Fig. 13 and *lustralis* was pictured in the Proc. U. S. Nat. Mus., XIV, Pl. VIII, Fig. 11. The resemblance in type is obvious; but the difference in detail is equally great. Perhaps the greatest exists in the presence of the small accessory clasper in *cervina*, no appearance of which was seen in *lustralis*.

*Mamestra neoterica* looks like a small *detracta* with some minor differences in type of maculation. When the genitalia of the males are compared, these differences are enormously increased, though there is no change in type. The shape of the harpes differs, not only

in general but in the termination, which is long drawn out in *detracta* and rather short and abruptly terminated in *neoterica*. In the latter the clasper is a simple, curved, corneous hook, while in the former it is a peculiar spatulate process with a slender, acute tip. *Detracta* is figured in Proc. U. S. Nat. Mus., XIV, Pl. IX, Fig. 12, and the corresponding parts of *neoterica* are shown Pl. I, Fig. 14.

**Mamestra lunolacta**, sp. nov.

Ground color of head, thorax and primaries smoky fuscous, black powdered, and with an admixture of whitish or greenish scales that may, at times, give the insect a mossy appearance. Head with an admixture of gray scales. Collar with a feebly marked light median line and a blackish line below the gray tip. Thoracic vestiture defective in my specimens. Primaries with all the markings present, not contrasting except that the reniform is prominently white-ringed, and there is a large, lunate creamy white patch in the s. t. space just above vein 1. Basal line geminate, black, included space marked by creamy or mossy scales. T. a. line geminate, complete, blackish, included space a little mossy, as a whole obliquely outcurved. T. p. line geminate, inner line blackish, best marked in the submedian interspace, outer line smoky, lost over the cell: as a whole, the line is rather evenly curved over the reniform and then runs evenly oblique to the inner margin. S. t. line white or whitish, a little irregular, continuous, edged here and there by blackish scales or spots. Fringes long, a series of whitish lunules at their base, a line of brownish intermediate lunules, tips yellowish. Claviform small, incompletely outlined by black scales, with mossy yellowish scales that extend inward toward base. Orbicular small, narrow, oblique, outlined by black scales within which is a narrow paler line, else concolorous. Reniform narrow, upright, oblong or feebly lunate, outlined by black scales within which is a rather prominent white ring. Center concolorous. Secondaries smoky, a little paler at base, fringes whitish with a broad smoky interline. Beneath, primaries blackish smoky, with pale costal dots and pale lunules at the base of the fringes: secondaries gray, powdery, with a smoky outer line, marginal shade and small discal spot. Expands 1.08 inches = 27 mm.

*Habitat*: Idaho; Pullman, Washington, C. V. Piper.

Two females, both somewhat rubbed and with defective thoracic vestiture. This is a somewhat obscure, powdery form that gives the impression as though it might vary to mossy green at times. It is not unlike *alboguttata* in type of maculation, without the contrasts that inspired Mr. Grote's name, while it is characteristic in the large lunate pale patch in the s. t. space, extending to the hind margin only by an enlargement of the s. t. line. The s. t. space is a little paler, more grayish powdered than the rest of the wing; but not contrasting. The species should be readily recognized as a member of the smaller, stumpy-winged groups — *olivacea* or *laudabilis*; but its nearest allies cannot be determined until the male is at hand.

## GENERAL NOTES ON SCOTOGRAMMA.

In my revision of some Tæniocampid genera (Proc. U. S. Nat. Mus., 1889, XII, pp. 445-496) I recognized six species as belonging to this genus. The group to which the generic term is applied is not a very satisfactory one, including as it does forms in which the vestiture is thin, hairy and divergent, and others in which it is scaly and close. Yet the species have a habitual resemblance, and the line between the two kinds of vestiture is not sharply defined. All of them are obscurely marked and while in some respects the relationship seems close, the resemblances are usually more apparent than real. Since 1889 eight species have been described by myself and one, described in this paper, brings the total number up to fifteen. In 1889 the male of *submarina* only was known and that was figured on Pl. XXII, Fig. 17, of the paper cited. The males of seven additional species are now at hand and figures of the genitalic characters are presented on Pl. I, Figs. 15 to 21. It will be noted that there are two rather obvious types, one of which is composed of *densa* and *megera* only. Comparisons are best made from the figures, and while the forms are very similar, the differences are sufficient to hold the species. The superficial differences are even greater and, in the series before me, comprising both sexes of both species, there is not a trace of any intergradation. *Megara* is uniformly larger, with proportionately more ample wings and the color is altogether different. That they can be varieties of one species does not seem credible to me. Very much the same type of genitalic structure is found in *Mamestra variolata* as figured on Pl. IX, Fig. 35, Proc. U. S. Nat. Mus., XIV, 1891, though there is no resemblance between the insects themselves. In *submarina*, on the other hand, which is superficially a close ally to *densa* and *megera*, the genitalic characters are totally different: indeed they are unlike those of any other species of the genus. The other five species here referred to agree in a general way, the harpes being oblong, a little bent toward tip, the rounded lappet set with a series of spinules. The corneous claspers are double, and in this character they are Tæniocampid rather than Mamestrid. *S. luteola* and *uniformis* are most nearly allied, but in the former the harpes are not only relatively but absolutely smaller and broader, while the claspers differ in proportion to each other and to the same structures in the other species. *Phoca*, *discolor* and *infuscata* differ sufficiently to make a reference to the genitalic characters unnecessary, though in each form

these are distinctive. I have other, yet undescribed species of this genus, but prefer to hold them for better, more abundant material.

**Scotogramma albinuda**, sp. nov.

Ground color dark ashen gray, tending to smoky. Head and thorax concolorous, vestiture thin, loose, hairy, divergent. Primaries with the ordinary lines single, smoky, diffuse, not contrasting. Basal line very close to the root of the wing, inwardly bent on the subcostal. T. a. line upright as a whole, irregular, strongly outcurved in the submedian interspace. T. p. line lunulate, almost crenulate, broadly outcurved over the cell, rather deeply incurved in the submedian interspace. S. t. line is indicated by a dark preceding shade which is obvious on the costa, but gradually lost toward the hind margin: a few paler scales may or may not emphasize this line. A series of terminal dark lunules resembling a broken terminal line. Fringes with a pale interline, very narrowly cut with white on the veins. A smoky median shade is obvious on the costa, extending over and darkening the reniform, and it may or may not be faintly traceable to the inner margin. Orbicular concolorous, barely traceable, round, moderate in size. Reniform rather small, dark, broadly lunate rather than kidney-shaped. Secondaries deep smoky brown, with an obvious dark median shade, followed by a vague yellowish band, and a large blackish discal spot; fringes pale. Beneath whitish or smoky, powdery, with a common extra-median shade band and a large discal spot; primaries with an obvious s. t. shade band. Expands 1.28-1.32 inches = 32-33 mm.

*Habitat*: Rama, Labrador, 1900, A. Stecker, J. D. Sornborger.

Three females in fair condition from the Museum of Comparative Zoölogy, through the courtesy of Mr. Henshaw. The species is allied to *uniformis* Sm., but is somewhat better marked throughout, the color being also more ashen gray. The dusky shade band across the secondaries, followed by a diffuse pale shade is characteristic and readily identifies the species.

**Nephelodes tertialis**, sp. nov.

Ground color rusty red-brown varying to purplish or toward a somewhat luteous shading. Head and thorax concolorous, the former usually a little lighter than the thorax. Antennæ of ♂ well pectinated; of ♀ entirely simple. Primaries with fairly distinct maculation, the median space darker than the rest of the wing and thus defining the median lines which are not otherwise contrasting. Basal line wanting or marked only by costal dots. T. a. line geminate, the inner line vague, included space a little paler; as a whole a little outwardly oblique and a very little outcurved in the interspaces. T. p. line geminate, the outer line even, very little relieved, inner line forming the sharp border of the dark median space, included space a little paler. S. t. line very narrow, irregular, a little paler than ground, sometimes emphasized by a somewhat darker preceding shade, sometimes almost obsolete. A narrow darker line at the base of the fringes. Orbicular large, round, of the pale ground, without defining line. Reniform large, somewhat kidney-shaped, of the pale ground, the outer portion sometimes relieved by a few yellowish scales. Claviform very small and only feebly defined. Secondaries smoky, yellowish at base, variable in tint, the



fringes whitish with a rosy tinge. Beneath smoky with a rosy flush, powdery, disc of primaries darker, with a more or less complete outer line and on secondaries a small dusky lunule which may be altogether wanting. Expands 1.32-1.48 inches = 33-37 mm.

*Habitat*: Winnipeg, Manitoba, August 16-24, A. W. Hanham.

Eight examples, most of them in at least fair condition and only one of them a female. The species resembles the eastern form in general appearance and type of maculation; but is decidedly smaller throughout. The fringes are more even, with hardly a trace of scalloping, and there is no obvious median shade on the primaries. Add to this a distinct difference in the genitalia of the male and the specific separation proves inevitable. I have heretofore considered this as a small form of the eastern species and have so named it for the north-western collectors who have sent me material.

### **Anarta laerta**, sp. nov.

Head and thorax black, clothed with smoky brown divergent hair and scales forming, in good examples, a distinct collar and obvious patagia. Collar and patagia paler tipped. Abdomen black. Primaries smoky brown, a little powdery, somewhat paler in the discal cell. Median lines single, black, obvious but not prominent. Basal line dentate on the veins, accompanied by a narrow, preceding paler shade. T. a. line rather evenly outcurved and scarcely oblique. T. p. line denticulate on the veins, hardly lunate, outwardly bent over the cell and not much incurved below the reniform. S. t. line pale, continuous or broken, preceded by obscure spots and shadings, the terminal space darkening to a blackish broken terminal line. Fringes paler tipped. A dark median shade crosses the reniform and then runs parallel with and close to the t. p. line. Claviform moderate or small, outlined in blackish and sometimes black filled. Orbicular round, variable in size, sometimes black-ringed only, and sometimes a rather undefined round spot. Reniform large, blackish-brown, varying from a rounded oblong to kidney-shaped, sometimes centrally constricted from both sides. Secondaries black along the inner and outer margins, the band broad, inwardly diffuse from the inner margin, sharply limited from the outer margin to a dirty white disc, which extends along the costal margin to base and is interrupted by a large, black, lunate spot which leaves only a little of the white visible. Beneath, the disc of both wings is whitish with a large, black, somewhat lunate spot. Toward base the wings become blackish. The secondaries have a broad black outer border through which there may or may not be a whitish shade line: the fringes whitish as on the upper side. Primaries with a smaller black spot corresponding to the orbicular and a black band corresponding in course to the t. p. line: beyond this the wing is more smoky to the blackish fringes which are based by a broken black line. Expands .88-1.08 inches = 22-27 mm.

*Habitat*: Silver Lake, Utah, July 13, Dr. Henry Skinner; Mt. Rainier, Washington Exper. Sta. No. 633, Professor C. V. Piper.

Three male and two female examples in good condition. Two of

these came from Mr. S. T. Kemp and are marked Utah, July 15; but I believe they are from the same lot as those which I owe to Dr. Skinner. The species seems to have been taken in some numbers and examples are in several collections. The general resemblance is to *melanopa*, but the new form is much darker and the secondaries have the pale area almost completely obscured. In the material before me the female is more obscurely marked than the male.

***Cosmia venosa*, sp. nov.**

Ground color a rusty luteous, varying toward the reddish. Head and thorax concolorous. Primaries powdery, all the veins more or less obviously blackish, the result being a peculiarly sordid appearance. The upper half of the median space is the darkest part of the wing and from this the otherwise undefined ordinary spots stand out as paler than any other part of the wing. Basal line geminate on the costa, but usually not traceable beyond it. T. a. line single, brown or smoky, more or less outcurved in the interspaces, as a whole a little oblique outwardly. T. p. line single, brown, more or less crenulated, rather widely bent over the cell, and either evenly oblique or a little incurved below that point. S. t. line vague, irregular, concolorous, marked only by a broken and very irregular preceding dusky shade. A narrow brown line at the base of the fringes. Median shade broad, diffuse, smoky, variably distinct, outwardly oblique from costa to lower margin of reniform, thence rather evenly oblique to the inner margin. Orbicular large, varying from round to oblong or oval, not sharply defined. Reniform large, kidney-shaped, not well defined. No obvious claviform. Secondaries pale, smoky yellowish. Beneath somewhat paler, only a little powdery, both wings with a smoky outer line and a small, hardly contrasting discal lunule. Expands 1.48-1.68 inches = 37-42 mm.

*Habitat*: Corvallis, Oregon, June 4-29, at light, A. B. Cordley; Olympic Mts., Washington, C. V. Piper; Victoria, British Columbia, July 7, through Dr. Fletcher.

Two male and four female examples are before us. The species differs obviously in appearance from the two forms previously described, in the crenulate t. p. line and the generally sordid, roughened appearance. The vestiture is also looser and more divergent; but this may be due in part to the fact that none of the specimens are perfect and all seem to have been caught at light.

***Scopelosoma colorado*, sp. nov.**

Ground color varies from reddish clay to pale rusty reddish. Head and thorax immaculate, concolorous with primaries. Primaries very slightly powdery, the ordinary maculation feebly defined. Basal line may or may not be visible; if it is, there is a narrow pale line with a scarcely darker defining edge. T. a. line faint, yet obvious, whitish, with a narrow smoky edging, a little irregular, but as a whole only a little oblique, nearly rigid. T. p. line geminate, with concolorous center, outer defining line even, hardly darker or altogether wanting; inner defining line crenulate,

slender, blackish in pale specimens, hardly darker than ground in deeply colored examples; as a whole it is a little and very evenly outcurved. S. t. line irregular, either a slightly paler line on an even ground, a mere contrast caused by a dusky terminal shading or by a preceding cloud. A darker terminal line at base of fringes. There is an obscure median shade, hardly traceable from costa obliquely to the inferior portion of reniform, there a little angled and then, more obvious to the inner margin. Claviform and orbicular wanting. Reniform rather narrowly kidney-shaped, somewhat rusty red outwardly, a little darkened inferiorly and with or without white dots at the extremities. Secondaries smoky, a little paler at base, fringes luteous to reddish. Beneath reddish, powdery, all wings with an extra-median line, primaries with the disk smoky, secondaries with a small discal spot. Expands 1.40-1.60 inches = 35-40 mm.

*Habitat*: Glenwood Springs, Colorado, April and October.

Three examples, all males, from Dr. Barnes, who has others. The specimens were captured in 1893, 1894 and 1895, and I have kept them associated with *walkeri* and *sidus* as a color variation. To determine which species I really had the genitalia were examined and proved it distinct from either of those described and figured by me. The maculation is as in the two species mentioned, but more obscure than in either, and the ground color is intermediate. It is also more even in appearance and the median shade is not nearly so well marked as in *walkeri*. The genitalic structure is most like that in *walkeri*, but lacks the accessory basal clasper and the tip of the harpe is entirely different in shape, unlike any other in the genus.

#### EXPLANATION OF PLATE I.

- ✓ Fig. 1. *Mamestra purpurissata*, ♂, harpe and clasper.
- ✓ Fig. 2. " *juncimacula*, ♂, harpe and clasper.
- ✓ Fig. 3. " *nugatis*, ♂, harpe and clasper.
- ✓ Fig. 4. " *mystica*, ♂, harpe and clasper.
- ✓ Fig. 5. " *ingravis*, ♂, harpe and clasper.
- ✓ Fig. 6. " *gussata*, ♂, harpe and clasper.
- ✓ Fig. 7. " *plicata*, ♂, harpe and clasper.
- ✓ Fig. 8. " *segregata*, ♂, harpe and clasper.
- ✓ Fig. 9. " *subtrina*, ♂, harpe and clasper.
- ✓ Fig. 10. " *intentata*, ♂, harpe and clasper.
- ✓ Fig. 11. " *mutilata*, ♂, harpe and clasper.
- ✓ Fig. 12. " *navia*, ♂, harpe and clasper.
- ✓ Fig. 13. " *cervina*, ♂, harpe and clasper.
- ✓ Fig. 14. " *neoterica*, ♂, harpe and clasper.
- ✓ Fig. 15. *Scotogramma densa*, ♂, harpe and clasper.
- ✓ Fig. 16. " *megera*, ♂, harpe and clasper.
- ✓ Fig. 17. " *luteola*, ♂, harpe and clasper.
- ✓ Fig. 18. " *uniformis*, ♂, harpe and clasper.

- Fig. 19. *Scotogramma infuscata*, ♂, harpe and clasper.  
 — Fig. 20. “ *discolor*, ♂, harpe and clasper.  
 — Fig. 21. “ *phoca*, ♂, harpe and clasper.

### ILLUSTRATIONS OF THE LARVÆ OF NORTH AMERICAN CULICIDÆ. — III.

BY HARRISON G. DYAR, PH.D.

The species figured herewith are largely the result of Professor John B. Smith's investigations on mosquitoes in New Jersey, of which he has given a preliminary account (Ent. News, XIII, 299-303, 1902). Professor Smith has handed me certain species obtained by his correspondents which I had not seen, and he requested two of them, Mr. H. Brehme and Mr. J. Turner Brakeley, to send living material. Mr. Brakeley especially responded most cordially and not only sent interesting material, but in collecting it, found a species new to New Jersey and previously unknown to Professor Smith, namely *Culex melanurus*. The jar sent by Mr. Brehme from the salt marshes of the Elizabeth River contained a mixture of *Culex sollicitans*, *C. tæniorhynchus*, *C. sylvestris* and *C. nigrutilus*. The latter larva was a surprise, coming close to *territans* which has hitherto stood alone.

#### ***Culex tæniorhynchus* Wiedemann.**

Larvæ bred by Professor Smith with *sollicitans* “from eggs in the same piece of sod” (Ent. News, XIII, 300), sent by Mr. Brehme as noted above and given me by Mr. Kotinsky from a culture at the Insectary of the Department of Agriculture which had been obtained at St. Georges Island, Md., by Mr. B. Eftyhithes. The larva differs from *sollicitans* by the shorter tube and differently shaped teeth of the lateral comb (Pl. II, Fig. 1, *B*), and comes nearest to *Stegomyia fasciata*, from which it differs in the comb (Pl. II, Fig. 2, comb of *fasciata*).

*Larva*.—(Pl. II, Fig. 1.) Head rounded pentagonal, flattened, normal, brown; antennæ moderate, uniform, slender, infuscated outwardly, paler at base, the tuft reduced to one hair, short, before the middle; mouth brush normal, well developed; dentate labial triangle low and broad, regularly and evenly toothed. Body normal, hairs moderate, diminishing posteriorly; air tube very short, not much